

CLAIMS

- [c1] 1. A method for delivering information to a dormant target communication device in a wireless communication system including a base station controller (BSC) and a packet control function (PCF), the method comprising:
- receiving information at the BSC for transmission to a target communication device; and
- broadcasting the information to a plurality of communication devices within a service area of the BSC.
- [c2] 2. The method of claim 1, wherein said broadcasting includes broadcasting the information to the communication devices belonging to a group call.
- [c3] 3. The method of claim 1, wherein the BSC and the PCF are co-located.
- [c4] 4. The method of claim 1, wherein said broadcasting includes transmitting the information on a forward common channel of a wireless network.
- [c5] 5. The method of claim 4, wherein said broadcasting includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.
- [c6] 6. The method of claim 4, wherein said broadcasting includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.
- [c7] 7. The method of claim 4, wherein said transmitting includes transmitting the information as short data burst (SDB).
- [c8] 8. A computer-readable medium embodying a method for delivering information to a dormant target communication device in a wireless communication system including a base station controller (BSC) and a packet control function (PCF), the method comprising:
- receiving information at a BSC for transmission to a target communication device; and
- broadcasting the information to a plurality of communication devices within a service area of the BSC.

- [c9] 9. The computer-readable medium of claim 8, wherein said broadcasting includes broadcasting the information to the communication devices belonging to a group call.
- [c10] 10. The computer-readable medium of claim 8, wherein the BSC and the PCF are co-located.
- [c11] 11. The computer-readable medium of claim 8, wherein said broadcasting includes transmitting the information on a forward common channel of a wireless network.
- [c12] 12. The computer-readable medium of claim 11, wherein said broadcasting includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.
- [c13] 13. The computer-readable medium of claim 11, wherein said broadcasting includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.
- [c14] 14. The computer-readable medium of claim 11, wherein said transmitting includes transmitting the information as short data burst (SDB).
- [c15] 15. An apparatus for delivering information to a dormant target communication device in a wireless communication system including a base station controller (BSC) and a packet control function (PCF), comprising:
means for receiving information at a BSC for transmission to a target communication device; and
means for broadcasting the information to a plurality of communication devices within a service area of the BSC.
- [c16] 16. The apparatus of claim 15, wherein said means for broadcasting includes means for broadcasting the information to the communication devices belonging to a group call.
- [c17] 17. The apparatus of claim 15, wherein the BSC and the PCF are co-located.
- [c18] 18. The apparatus of claim 15, wherein said means for broadcasting includes means for transmitting the information on a forward common channel of a wireless network.

[c19] 19. The apparatus of claim 18, wherein said means for broadcasting includes means for transmitting the information on a forward paging channel (F-PCH) of the wireless network.

[c20] 20. The apparatus of claim 18, wherein said means for broadcasting includes means for transmitting the information on a forward common control channel (F-CCCH) of the wireless network.

[c21] 21. The apparatus of claim 18, wherein said means for transmitting includes means for transmitting the information as short data burst (SDB).

[c22] 22. An apparatus for delivering information to a dormant target communication device in a wireless communication system including a base station controller (BSC) and a packet control function (PCF), comprising:

a memory unit;

a receiver;

a transmitter; and

a processor coupled to the memory unit, the receiver, and the transmitter, the processor being capable of:

receiving information at a BSC for transmission to a target communication device; and

broadcasting the information to a plurality of communication devices within a service area of the BSC.

[c23] 23. The apparatus of claim 22, wherein said broadcasting includes broadcasting the information to the communication devices belonging to a group call.

[c24] 24. The apparatus of claim 22, wherein the BSC and the PCF are co-located.

[c25] 25. The apparatus of claim 22, wherein said broadcasting includes transmitting the information on a forward common channel of a wireless network.

[c26] 26. The apparatus of claim 25, wherein said broadcasting includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.

- [c27] 27. The apparatus of claim 25, wherein said broadcasting includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.
- [c28] 28. The apparatus of claim 25, wherein said transmitting includes transmitting the information as short data burst (SDB).
- [c29] 29. A method for delivering information to a dormant target communication device in a wireless communication system including a base station controller (BSC) and a packet control function (PCF), the method comprising:
- receiving information at the BSC for transmission to a target communication device;
 - sending a request to a plurality of communication devices within a service area of the BSC;
 - receiving a response from a communication device in the service area; and
 - sending the information to the communication device that has responded to the request.
- [c30] 30. The method of claim 29, wherein said sending includes sending the information to the communication devices belonging to a group call.
- [c31] 31. The method of claim 29, wherein the BSC and the PCF are co-located.
- [c32] 32. The method of claim 29, wherein said request includes information identifying the target communication device.
- [c33] 33. The method of claim 32, wherein said response includes location information of the communication device that has responded to the request.
- [c34] 34. The method of claim 33, further including caching the location information.
- [c35] 35. The method of claim 29, further including caching the information before said sending.
- [c36] 36. The method of claim 29, wherein said sending includes transmitting the information on a forward common channel of a wireless network.

[c37] 37. The method of claim 36, wherein said sending includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.

[c38] 38. The method of claim 36, wherein said sending includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.

[c39] 39. The method of claim 36, wherein said transmitting the information includes transmitting the information as short data burst (SDB).

[c40] 40. A computer-readable medium embodying a method for delivering information to a dormant target communication device in a wireless communication system including a base station controller (BSC) and a packet control function (PCF), the method comprising:

receiving information at the BSC for transmission to a target communication device;

sending a request to a plurality of communication devices within a service area of the BSC;

receiving a response from a communication device in the service area; and

sending the information to the communication device that has responded to the request.

[c41] 41. The computer-readable medium of claim 40, wherein said sending includes sending the information to the communication devices belonging to a group call.

[c42] 42. The computer-readable medium of claim 40, wherein the BSC and the PCF are co-located.

[c43] 43. The computer-readable medium of claim 40, wherein said request includes information identifying the target communication device.

[c44] 44. The computer-readable medium of claim 43, wherein said response includes location information of the communication device that has responded to the request.

[c45] 45. The computer-readable medium of claim 43, the method further including caching the location information.

[c46] 46. The computer-readable medium of claim 40, the method further including caching the information before said sending.

[c47] 47. The computer-readable medium of claim 40, wherein said sending includes transmitting the information on a forward common channel of a wireless network.

[c48] 48. The computer-readable medium of claim 47, wherein said sending includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.

[c49] 49. The computer-readable medium of claim 47, wherein said sending includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.

[c50] 50. The computer-readable medium of claim 47, wherein said transmitting the information includes transmitting the information as short data burst (SDB).

[c51] 51. An apparatus for delivering information to a dormant target communication device in a wireless communication system including a base station controller (BSC) and a packet control function (PCF), comprising:

means for receiving information at the BSC for transmission to a target communication device;

means for sending a request to a plurality of communication devices within a service area of the BSC;

means for receiving a response from a communication device in the service area; and

means for sending the information to the communication device that has responded to the request.

[c52] 52. The apparatus of claim 51, wherein said means for sending includes means for sending the information to the communication devices belonging to a group call.

[c53] 53. The apparatus of claim 51, wherein the BSC and the PCF are co-located.

[c54] 54. The apparatus of claim 51, wherein said request includes information identifying the target communication device.

[c55] 55. The apparatus of claim 54, wherein said response includes location information of the communication device that has responded to the request.

[c56] 56. The apparatus of claim 55, further including means for caching the location information.

[c57] 57. The apparatus of claim 51, further including means for caching the information before said sending.

[c58] 58. The apparatus of claim 51, wherein said means for sending includes means for transmitting the information on a forward common channel of a wireless network.

[c59] 59. The apparatus of claim 58, wherein said means for sending includes means for transmitting the information on a forward paging channel (F-PCH) of the wireless network.

[c60] 60. The apparatus of claim 58, wherein said means for sending includes means for transmitting the information on a forward common control channel (F-CCCH) of the wireless network.

[c61] 61. The apparatus of claim 58, wherein said means for transmitting includes means for transmitting the information as short data burst (SDB).

[c62] 62. An apparatus for delivering information to a dormant target communication device in a wireless communication system including a base station controller (BSC) and a packet control function (PCF), comprising:

a memory unit;

a receiver;

a transmitter; and

a processor coupled to the memory unit, the receiver, and the transmitter, the processor being capable of:

receiving information at the BSC for transmission to a target communication device;

sending a request to a plurality of communication devices within a service area of the BSC;

receiving a response from a communication device in the service area; and
sending the information to the communication device that has responded to the request.

[c63] 63. The apparatus of claim 62, wherein said broadcasting includes broadcasting the information to the communication devices belonging to a group call.

[c64] 64. The apparatus of claim 62, wherein the BSC and the PCF are co-located.

[c65] 65. The apparatus of claim 62, wherein said request includes information identifying the target communication device.

[c66] 66. The apparatus of claim 65, wherein said response includes location information of the communication device that has responded to the request.

[c67] 67. The apparatus of claim 66, wherein the processor further is capable of caching the location information.

[c68] 68. The apparatus of claim 62, wherein the processor further is capable of caching the information before said sending.

[c69] 69. The apparatus of claim 62, wherein said sending includes transmitting the information on a forward common channel of a wireless network.

[c70] 70. The apparatus of claim 69, wherein said sending includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.

[c71] 71. The apparatus of claim 69, wherein said sending includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.

[c72] 72. The apparatus of claim 69, wherein said transmitting includes transmitting the information as short data burst (SDB).

[c73] 73. A method for delivering information to a dormant target communication device in a wireless communication system including a plurality of a base station controllers (BSCs) in communication with a packet control function (PCF), the method comprising:

receiving a request at one of the plurality of BSCs to send information to a target communication device;

determining if the BSC has location information about the target communication device;
and

transmitting the information to the target communication device if the BSC has the location information.

[c74] 74. The method of claim 73, further including transmitting the information to other BSCs if said BSC does not have location information for the target communication device so that one of the other BSCs that has location information for the target communication device transmits the information to the target communication device.

[c75] 75. The method of claim 74, further including broadcasting the information to all communication devices if none of the BSCs has location information for the target communication device.

[c76] 76. The method of claim 73, wherein the BSCs and the PCF are not co-located.

[c77] 77. The method of claim 73, wherein said transmitting includes transmitting on a forward common channel of a wireless network.

[c78] 78. The method of claim 77, wherein said transmitting includes transmitting on a forward paging channel (F-PCH) of the wireless network.

[c79] 79. The method of claim 77, wherein said transmitting includes transmitting on a forward common control channel (F-CCCH) of the wireless network.

[c80] 80. The method of claim 77, wherein said transmitting the information includes transmitting the information as short data burst (SDB).

[c81] 81. A computer-readable medium embodying a method for delivering information to a dormant target communication device in a wireless communication system including a plurality of a base station controllers (BSCs) in communication with a packet control function (PCF), the method comprising:

receiving a request at one of the plurality of BSCs to send information to a target communication device;

determining if the BSC has location information about the target communication device; and

transmitting the information to the target communication device if the BSC has the location information.

[c82] 82. The computer-readable medium of claim 81, further including transmitting the information to other BSCs if said BSC does not have location information for the target communication device so that one of the other BSCs that has location information for the target communication device transmits the information to the target communication device.

[c83] 83. The computer-readable medium of claim 82, the method further including broadcasting the information to all communication devices if none of the BSCs has location information for the target communication device.

[c84] 84. The computer-readable medium of claim 81, wherein the BSCs and the PCF are not co-located.

[c85] 85. The computer-readable medium of claim 81, wherein said transmitting includes transmitting on a forward common channel of a wireless network.

[c86] 86. The computer-readable medium of claim 85, wherein said transmitting includes transmitting on a forward paging channel (F-PCH) of the wireless network.

[c87] 87. The computer-readable medium of claim 85, wherein said transmitting includes transmitting on a forward common control channel (F-CCCH) of the wireless network.

[c88] 88. The computer-readable medium of claim 85, wherein said transmitting includes transmitting the information as short data burst (SDB).

[c89] 89. An apparatus for delivering information to a dormant target communication device in a wireless communication system including a plurality of a base station controllers (BSCs) in communication with a packet control function (PCF), comprising:

means for receiving a request at one of the plurality of BSCs to send information to a target communication device;

means for determining if the BSC has location information about the target communication device; and

means for transmitting the information to the target communication device if the BSC has the location information.

[c90] 90. The apparatus of claim 90, further including means for transmitting the information to other BSCs if said BSC does not have location information for the target communication device so that one of the other BSCs that has location information for the target communication device transmits the information to the target communication device.

[c91] 91. The apparatus of claim 89, further including means for broadcasting the information to all communication devices if none of the BSCs has location information for the target communication device.

[c92] 92. The apparatus of claim 89, wherein the BSCs and the PCF are not co-located.

[c93] 93. The apparatus of claim 89, wherein said means for transmitting transmits the information on a forward common channel of a wireless network.

[c94] 94. The apparatus of claim 93, wherein said means for transmitting transmits the information on a forward paging channel (F-PCH) of the wireless network.

[c95] 95. The apparatus of claim 93, wherein said means for transmitting transmits the information on a forward common control channel (F-CCCH) of the wireless network.

[c96] 96. The apparatus of claim 93, wherein said means for transmitting transmits the information as short data burst (SDB).

[c97] 97. An apparatus for delivering information to a dormant target communication device in a wireless communication system including a plurality of a base station controllers (BSCs) in communication with a packet control function (PCF), comprising:

a memory unit;

a receiver;

a transmitter; and

a processor coupled to the memory unit, the receiver, and the transmitter, the processor being capable of:

receiving a request at one of the plurality of BSCs to send information to a target communication device;

determining if the BSC has location information about the target communication device;

and

transmitting the information to the target communication device if the BSC has the location information.

[c98] 98. The apparatus of claim 97, the processor further being capable of transmitting the information to other BSCs if said BSC does not have location information for the target communication device so that one of the other BSCs that has location information for the target communication device transmits the information to the target communication device.

[c99] 99. The apparatus of claim 98, the processor further being capable of broadcasting the information to all communication devices if none of the BSCs has location information for the target communication device.

[c100] 100. The apparatus of claim 97, wherein the BSCs and the PCF are not co-located.

[c101] 101. The apparatus of claim 97, wherein said transmitting includes transmitting on a forward common channel of a wireless network.

[c102] 102. The apparatus of claim 101, wherein said transmitting includes transmitting on a forward paging channel (F-PCH) of the wireless network.

[c103] 103. The apparatus of claim 101, wherein said transmitting includes transmitting on a forward common control channel (F-CCCH) of the wireless network.

[c104] 104. The apparatus of claim 101, wherein said transmitting includes transmitting the information as short data burst (SDB).

[c105] 105. A method for delivering information to a dormant target communication device in a wireless communication system including a mobile station controller (MSC) and a plurality of base station controllers (BSCs) in communication with a packet control function (PCF), the method comprising:

receiving an application data delivery service (ADDS) page at one of the plurality of BSCs for transmitting information to the target communication device;

buffering the information at the BSC;

sending a request to the communication device;

receiving a response from the target communication device; and

sending the information to the target communication device.

[c106] 106. The method of claim 105, wherein said sending the request includes sending a registration request, and said receiving the response includes receiving a registration response.

[c107] 107. The method of claim 105, wherein said sending the request includes sending a general page, and said receiving the response includes receiving a general page response.

[c108] 108. The method of claim 105, wherein the response includes location information of the target communication device.

[c109] 109. The method of claim 108, further including caching the location information of the target communication device.

[c110] 110. The method of claim 105, wherein the BSCs and the PCF are not co-located.

[c111] 111. The method of claim 105, wherein said sending includes transmitting the information on a forward common channel of a wireless network.

[c112] 112. The method of claim 110, wherein said sending includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.

[c113] 113. The method of claim 110, wherein said sending includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.

[c114] 114. The method of claim 110, wherein said sending includes transmitting the information as short data burst (SDB).

[c115] 115. A computer-readable medium embodying a method for delivering information to a dormant target communication device in a wireless communication system including a mobile station controller (MSC) and a plurality of base station controllers (BSCs) in communication with a packet control function (PCF), the method comprising:

receiving an application data delivery service (ADDS) page at one of the plurality of BSCs for transmitting information to the target communication device;

buffering the information at the BSC;

sending a request to the communication device;

receiving a response from the target communication device; and

sending the information to the target communication device.

[c116] 116. The computer-readable medium of claim 115, wherein said sending the request includes sending a registration request, and said receiving the response includes receiving a registration response.

[c117] 117. The computer-readable medium of claim 115, wherein said sending the request includes sending a general page, and said receiving the response includes receiving a general page response.

[c118] 118. The computer-readable medium of claim 115, wherein the response includes location information of the target communication device.

[c119] 119. The computer-readable medium of claim 118, further including caching the location information of the target communication device.

[c120] 120. The method of claim 115, wherein the BSCs and the PCF are not co-located.

[c121] 121. The computer-readable medium of claim 115, wherein said sending includes transmitting the information on a forward common channel of a wireless network.

[c122] 122. The computer-readable medium of claim 121, wherein said sending includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.

[c123] 123. The computer-readable medium of claim 121, wherein said sending includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.

[c124] 124. The computer-readable medium of claim 121, wherein said sending includes transmitting the information as short data burst (SDB).

[c125] 125. An apparatus for delivering information to a dormant target communication device in a wireless communication system including a mobile station controller (MSC) and a plurality of base station controllers (BSCs) in communication with a packet control function (PCF), comprising:

means for receiving an application data delivery service (ADDs) page at one of the plurality of BSCs for transmitting information to the target communication device;

means for buffering the information at the BSC;

means for sending a request to the communication device;

means for receiving a response from the target communication device; and

means for sending the information to the target communication device.

[c126] 126. The apparatus of claim 125, wherein said means for sending the request includes means for sending a registration request, and said means for receiving the response includes means for receiving a registration response.

[c127] 127. The computer-readable medium of claim 125, wherein said means for sending the request includes means for sending a general page, and said means for receiving the response includes means for receiving a general page response.

[c128] 128. The apparatus of claim 125, wherein the response includes location information of the target communication device.

[c129] 129. The apparatus of claim 128, further including means for caching the location information of the target communication device.

[c130] 130. The apparatus of claim 125, wherein the BSCs and the PCF are not co-located.

[c131] 131. The apparatus of claim 125, wherein said means for sending transmits the information on a forward common channel of a wireless network.

[c132] 132. The apparatus of claim 131, wherein said means for sending transmits the information on a forward paging channel (F-PCH) of the wireless network.

[c133] 133. The apparatus of claim 131, wherein said means for sending transmits the information on a forward common control channel (F-CCCH) of the wireless network.

[c134] 134. The apparatus of claim 131, wherein said means for sending transmits the information as short data burst (SDB).

[c135] 135. An apparatus for delivering information to a dormant target communication device in a wireless communication system including a mobile station controller (MSC) and a plurality of base station controllers (BSCs) in communication with a packet control function (PCF), comprising:

a memory unit;

a receiver;

a transmitter; and

a processor coupled to the memory unit, the receiver, and the transmitter, the processor being capable of:

receiving an application data delivery service (ADDS) page at one of the plurality of BSCs for transmitting information to the target communication device;

buffering the information at the BSC;

sending a request to the communication device;

receiving a response from the target communication device; and

sending the information to the target communication device.

- [c136] 136. The apparatus of claim 135, wherein said sending the request includes sending a registration request, and said receiving the response includes receiving a registration response.
- [c137] 137. The computer-readable medium of claim 135, wherein said sending the request includes sending a general page, and said receiving the response includes receiving a general page response.
- [c138] 138. The apparatus of claim 135, wherein the response includes location information of the target communication device.
- [c139] 139. The apparatus of claim 138, the processor further being capable of caching the location information of the target communication device.
- [c140] 140. The apparatus of claim 139, wherein the BSCs and the PCF are not co-located.
- [c141] 141. The apparatus of claim 139, wherein said sending includes transmitting the information on a forward common channel of a wireless network.
- [c142] 142. The apparatus of claim 141, wherein said sending includes transmitting the information on a forward paging channel (F-PCH) of the wireless network.
- [c143] 143. The apparatus of claim 141, wherein said sending includes transmitting the information on a forward common control channel (F-CCCH) of the wireless network.
- [c144] 144. The apparatus of claim 141, wherein said sending includes transmitting the information as short data burst (SDB).